DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-013713
Date Inspected: 30-Apr-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1000
OSM Departure Time: 1830
Location: Clackamas, OR

CWI Name: M. Gregson, J. Salazar, G. Mundt

CWI Present:	☑ Yes	☐ No		**Inspected CWI report:**	☐ Yes	☑ No	☐ N/A
Rod Oven in Use:	☐ Yes	☐ No	☑ N/A	**Electrode to specification:**	☑ Yes	☐ No	☐ N/A
Weld Procedures Followed:	☑ Yes	☐ No	☐ N/A	**Qualified Welders:**	☑ Yes	☐ No	☐ N/A
Verified Joint Fit-up:	☑ Yes	☐ No	☐ N/A	**Approved Drawings:**	☑ Yes	☐ No	☐ N/A
Approved WPS:	☑ Yes	☐ No	☐ N/A				
Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A				

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

Hinge-K Pipe Beam Assembly 101A-4:
The QA Inspector was informed by OIW QC Inspector Jose' Salazar that he had performed Visual inspection on the exterior of the fit-up, on Weld Joint #W4-01. The QA Inspector noted that this Complete Joint Penetration (AWS D1.5 B-U7-S) was the Fuse 120A-4 to Forging 102A-4 and a total of four Flux Core Arc Welding (FCAW) tack welds, had been previously deposited, by OIW qualified welders. QC Inspector Salazar explained that the exterior of the fit-up was acceptable and that at this time, he does not have access to visually inspect the interior portion of the Weld Joint. QC Inspector Salazar explained that Swing Shift QC Inspector will perform this inspection, if access is provided.
The QA Inspector observed that Production Lead Troy Smith was present on this date and Lead Troy Smith explained that the Fuse perpendicular alignment had been verified by an OIW Machinist. Lead Troy Smith explained that the FARO Laser tracker had been utilized for this and that the Fuse alignment was .030” (.76 mm). The QA Inspector noted that per the contract requirements, the Fuse perpendicular alignment to Base weldment will be verified utilizing OIW’s in house laser tracker and that cylinder concentricity to the pipe beam access is to be within +/- 1 mm (Sect. 10-1.59 Special Provisions). The QA Inspector noted that prior to OIW starting the Submerged Arc Welding (SAW), OIW production personell will have to set-up the welding machine and related accessories. The QA Inspector noted these include the stationary pre-heat torches, interior pre-fabricated access

scaffold on the interior and the water cooling boxes, to cool and protect the stainless steel overlay, during the SAW process. Lead Troy Smith explained that production work will continue throughout the shift on setting these items up and will probably continue on swing and possibly graveyard shift. Lead Troy Smith explained that no SAW will be performed, prior to these items being completed. See attached picture below.

Hinge-K Pipe Beam Assembly 102A-3:
The QA Inspector was informed by OIW QC Inspector Jose' Salazar, that the Flux Core Arc Welding (FCAW) tack welding was now complete, on the a109 Post Tension Cap plate to HPS 485W stiffeners. QC Inspector Salazar explained that he was present during the tack welding and recorded in process welding parameters of 262 amps and 26.1 volts, with a pre-heat temperature of 400 degrees Fahrenheit. QC Inspector explained that the welding procedure specification 3049, had been utilized for the tack welding and WID #B62 had performed this in the horizontal (2G) position. The QA Inspector verified these welding parameters and pre-heat were in compliance with the applicable WPS. QC Inspector Salazar explained that he had verified the weld joint fit-up and accepted, after the tacking was complete and then he assigned weld joint numbers. The QA Inspector noted that these weld joint numbers assigned by QC Inspector Salazar were identical to the numbers assigned to the PJP's on the previous assemblies and are as follows: #W2-01 (a109 to b106), #W2-02 (a110 to b106), #W2-17 (a110 to b106), #W2-18 (a109 to b106), #W2-19 (a109 to a106), #W2-20 (a110 to a106), #W2-23 (a110 to ab106) and #W2-24 (a109 to ab106). The QA Inspector noted that these weld joints are designated, per the contract drawings, as AWS D1.5 Partial Joint Penetration TC-P4-S. The QA Inspector then verified the joint fit-up and the fit-up appeared to be in compliance with the contract requirements.
The QA Inspector later observed that OIW production had placed this assembly in the vertical position, in preparation for the Submerged Arc Welding (SAW) on the above mentioned PJP's. The QA Inspector spoke with Production Lead Troy Smith and he explained that WID #B62 (Marcus Belgarde) is currently setting up the welding machine and related equipment. Lead Troy Smith explained that once the equipment is set-up, pre heat will be established and a QC Inspector will be notified, prior to the SAW. See attached picture below.

Material, Equipment, and Labor Tracking (MELT)
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 4 OIW production personnel and 2 QC Inspectors.

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer